

WHAT IS CLAIMED IS:

1. A method comprising:

5 receiving a plurality of respective energy events;

receiving a plurality of base-level energy models;

10 generating a plurality of power models, wherein each power model hierarchically instantiates one or more of said base-level energy models; and

mapping each respective energy event to one or more of said plurality of power models.

15 2. The method of claim 1 further comprising:

hierarchically evaluating a particular base-level energy model corresponding to a given respective energy event;

20 estimating an energy associated with evaluation of said particular base-level energy model; and

accumulating said energy in a power estimate corresponding to said given respective energy event.

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3. The method of claim 1, wherein a first subset of said plurality of base-level energy models includes a plurality of parameters configured for selecting physical energy model characteristics.

4. The method of claim 3, wherein at least one of said first subset includes an aspect ratio parameter configured for scaling an energy estimate according to a value of said aspect ratio parameter.

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5. The method of claim 1, wherein at least one of said plurality of base-level energy models includes a plurality of parameters configured for selecting microarchitectural energy model characteristics.

10 6. The method of claim 1, wherein at least one of said plurality of base-level energy models includes a data value parameter configured for scaling an energy estimate according to a value of said data value parameter.

15 7. The method of claim 1 further comprising deriving a respective energy estimate corresponding to each of a subset of said plurality of base-level energy models from data extracted from a previously completed design.

8. A computer readable medium comprising instructions which, when executed:  
20 receive a plurality of respective energy events;

receive a plurality of base-level energy models;  
25 generate a plurality of power models, wherein each power model hierarchically instantiates one or more of said base-level energy models; and

map each respective energy event to one or more of said plurality of power models.

9. The computer readable medium of claim 8 further comprising instructions which, when executed:

5 hierarchically evaluate a particular base-level energy model corresponding to a given respective energy event;

estimate an energy associated with evaluation of said particular base-level energy model; and

10 accumulate said energy in a power estimate corresponding to said given respective energy event.

10. The computer readable medium of claim 8, wherein a first subset of said plurality 15 of base-level energy models includes a plurality of parameters configured for selecting physical energy model characteristics.

11. The computer readable medium of claim 10, wherein at least one of said first subset includes an aspect ratio parameter configured for scaling an energy estimate 20 according to a value of said aspect ratio parameter.

12. The computer readable medium of claim 8, wherein at least one of said plurality of base-level energy models includes a plurality of parameters configured for selecting microarchitectural energy model characteristics.

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13. The computer readable medium of claim 8, wherein at least one of said plurality of base-level energy models includes a data value parameter configured for scaling an energy estimate according to a value of said data value parameter.

14. The computer readable medium of claim 8 further comprising deriving a respective energy estimate corresponding to each of a subset of said plurality of base-level energy models from data extracted from a previously completed design.

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15. A system comprising:

an architecture simulation model configured to produce a plurality of respective energy events;

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a plurality of base-level energy models;

a plurality of power models, wherein each power model hierarchically instantiates one or more of said base-level energy models; and

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a mapping file configured to map each respective energy event to one or more of said plurality of power models.

16. The system of claim 15, wherein said architecture simulation model is further 20 configured to:

hierarchically evaluate a particular base-level energy model corresponding to a given respective energy event;

25 estimate an energy associated with evaluation of said particular base-level energy model; and

accumulate said energy in a power estimate corresponding to said given respective energy event.

17. The system of claim 15, wherein a first subset of said plurality of base-level energy models includes a plurality of parameters configured for selecting physical energy model characteristics.
18. The system of claim 17, wherein at least one of said first subset includes an aspect ratio parameter configured for scaling an energy estimate according to a value of said aspect ratio parameter.
19. The system of claim 15, wherein at least one of said plurality of base-level energy models includes a plurality of parameters configured for selecting microarchitectural energy model characteristics.
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20. The system of claim 15, wherein at least one of said plurality of base-level energy models includes a data value parameter configured for scaling an energy estimate according to a value of said data value parameter.
- 20 21. The system of claim 15, wherein a respective energy estimate corresponding to each of a subset of said plurality of base-level energy models is derived from data extracted from a previously completed design.